AIR SANITILIZING DEVICE FOR VEHICLES

FIELD OF THE INVENTION

The present invention relates to a sanitizing device having ultraviolet LCD and attached to an air outlet of the air vent to purify the air sent in the vehicles.

BACKGROUND OF THE INVENTION

A vehicle generally has several air vents located at the dashboard so as to send air into the interior of the vehicle. The air quality of big cities is so bad that the drivers usually close the windows of their vehicles while driving so as to reduce the bad air entering into the vehicles. A simple filtering member such as a netted plate may be used to roughly filter the air coming from the air vents, it is not satisfied for the passengers in the vehicles because there are varieties types of germs in the air and are harmful to the passengers' health.

SUMMARY OF THE INVENTION

The present invention relates to an air sanitizing device for vehicles and the device comprises a casing attached to an air vent of the vehicle and having a passage including an inlet and an outlet. An ultraviolet LCD is located in the passage and powered by a power supply device connected to the casing.

The primary object of the present invention is to provide an air sanitizing device that is attached to the air vent and able to kill the germs in the air.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a cross sectional view to show the air sanitizing device of the present invention attached to an air vent of vehicles;

Fig. 2 is a front view to show the air sanitizing device of the present invention attached to an air vent of vehicles;

Fig. 3 shows another embodiment of the air sanitizing device of the present invention;

Fig. 4 shows yet another embodiment of the air sanitizing device of the present invention;

Fig. 5 is an exploded view to show the air sanitizing device of the present invention and an ozone generating device;

Fig. 6 shows that the fan of the air sanitizing device of the present invention is replaced with a filtering net;

Figs. 7 to 10 respectively show the electric circuits used in the air sanitizing device of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1 and 2, the air sanitizing device for vehicles of the present invention comprises a casing 10 which is attached to an air vent 40 of the vehicle by known ways, and a passage 11 is defined through the casing 10 and includes an inlet 111 and an outlet 112. The inlet 111 communicates with the air vent 40 and the outlet 112. An ultraviolet LCD 30 is located in the passage 11 and powered by a power supply device 20 (Figs. 7-10) connected to the casing 10. The power supply device 20 includes a circuit board 22 in the casing 10 and connected to

the ultraviolet LCD 30. A button 12 is located on the casing 10 and is electrically connected to the power supply device 20 so that when pushing the button 12, the ultraviolet LCD 30 generates ultraviolet rays to damage germs passing through the passage 11.

The power supply device 20 includes a cable which has a plug to be connected to a cigarette lighter of the vehicle. The power supply device 20 is also be powered by batteries or other AC or DC electric currents. A fan 13 is located in the outlet 112 of the passage 11 to guide the air stream out from the outlet 112.

As shown in Fig. 3, a flexible tube 50 extends from the casing 10 and a light device is connected to an end of the flexible tube 50 so as to provide a lighting feature in the vehicles. The fan 13 can also be replaced with a plurality of rails 51 at the outlet 112. A filtering net 52 as shown in Fig. 4 can be engaged with the outlet 112 of the passage 11 to filter the air coming from the outlet 112. Fragrance device (not shown) can be installed in the casing 10 so as to add fragrance in the air.

An ozone generating device 53 as shown in Fig. 5 can be slidably inserted in the casing 10. Figure 6 shows a slot panel 54 is engaged with the outlet 112.

Figure 8 shows the circuit board 22 of the power supply device 20 includes a chip 55 which can be a #7805 current regulator chip so as to make the circuit operate in stable. A dividing resistor 56 and a limiting resistor 23 are connected to the button 12.

Figure 9 shows that the power supply device 20 can be powered by either batteries 57 or the power from the cigarette lighter 41. A switch 58 is used to switch

the two types of power supply. Figure 10 employs two types of power supply and a chip 55 to increase the efficiency of the device.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.